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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,652	01/04/2001	Susumu Kusakabe	112857-228	2981

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EXAMINER

SIMITOSKI, MICHAEL J

ART UNIT PAPER NUMBER

2134

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,652

Applicant(s)

KUSAKABE ET AL.

Examiner

Michael J Simitoski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

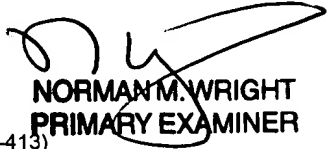
- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.7.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.


NORMAN M. WRIGHT
PRIMARY EXAMINER

DETAILED ACTION

1. The IDS of 10/14/03 and 2/2/04 were received and considered.
2. Claims 1-17 are pending.

Claim Objections

3. Claim 14 is objected to because of the following informalities: "business organization" in line 8 should be "business organizations". Claims 15-17 are objected to based on their dependence on claim 14. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how "the authentication" is required to access the "portable electronic device authentication". Claims 4-6 are rejected based on their dependence upon claim 2.
6. Claims 4 & 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim suggests that memory space information and file key information are encrypted and then 'added' to memory space information and file key information, whereas the specification suggests that memory space information and the issuer key are encrypted and then added to file key information (Fig. 5).

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7. Claim 9 recites the limitation "said second key information" in line 2. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 9 recites the limitation "said memory space specifying information" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 7, 11 & 14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,849,614 to Watanabe et al. (Watanabe).

Regarding claims 7 & 11, Watanabe discloses a memory unit having memory spaces allocated to said plurality of business organizations, said memory unit storing file key information (Fig. 1) specific to each of said plurality of business organizations (col. 5, lines 36-46) and first issuer key information (col. 5, lines 23-32), means/IC card for processing information transmitted from an access apparatus with said file key information/enterprise key and said first issuer key information/issuer key, and means for determining a result obtained by said processing means and, depending on a determined result, allowing said access apparatus to access the memory space corresponding to said file key information/enterprise key (col. 5, lines 15-46, col. 6, lines 27-33 & col. 9, lines 21-49).

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Regarding claim 14, Watanabe discloses executing authentication between a portable electronic device/IC card and the business organization/enterprise (col. 5, lines 36-46) by using file key information/enterprise key assigned to each of said plurality of business organizations (col. 5, lines 36-46) and first access key information/issuer key created based on first issuer key information (col. 5, lines 21-33) that is created by a management sector/issuer, determining based on a result of said authentication whether said portable electronic device/IC card and the business organization/enterprise are targets between which data can be mutually communicated, and accessing a memory space allocated in said memory unit when the targets are communicable therebetween, and updating said memory space after accessing (col. 5, lines 15-46, col. 6, lines 27-33 & col. 9, lines 21-49).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-2 & 15-17 (as best understood), are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of U.S. Patent 5,379,344 to Larsson et al. (Larsson).

Regarding claims 1 & 2, Watanabe discloses an access apparatus/reader-writer (col. 8, lines 39-40) for a portable electronic device/IC card (col. 5, lines 14-35) applied to an information processing system in which a memory unit in said portable device is employed by a plurality of business organizations/enterprises in common (col. 5, lines 14-35), where the

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apparatus transmits file key information/enterprise key assigned to each of a plurality of business organizations (col. 5, lines 14-35). Watanabe lacks access key information created based on the file key information and the issuer key information, but discloses using both file key information/first code number/enterprise key and issuer key information/issuer key possessed by a management sector/issuer to gain access to the data stored on the portable electronic device/IC card (col. 5, lines 14-35). However, Larsson discloses that supplying identification data (such as serial number, service provider number and manufacturer numbers), encrypting the data with a second piece of data (key) and comparing that data to predetermined data allows a user the freedom from memorizing a user PIN (col. 4, line 54 – col. 5, line 6). Larsson further teaches updating the data with a new user key increases the security of access to the card (col. 4, lines 30-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to create access key information based on the file key information/enterprise key and issuer key information/issuer key and execute authentication based on the access key information. One of ordinary skill in the art would have been motivated to perform such a modification to eliminate the need to memorize a PIN and to increase security, as taught by Larsson (col. 4, line 30 – col. 5, line 6).

Regarding claims 15-17, Watanabe lacks transmitting issuer key change information, created based on first issuer key information and second issuer key information to the portable electronic device/IC card and changing said first issuer key information. However, Larsson teaches that generating a new key and storing it on the card is useful to increase the security of access to the card and to protect against copying the card (col. 4, lines 38-42). Larsson's key is an encrypted certificate combined with parameters and encrypted. Therefore, it would have been

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obvious to one having ordinary skill in the art at the time the invention was made to transmit issuer key change information, based on first issuer key information/issuer key and second issuer key information/certificate to the device, receive second access key information/new key and change the first issuer key information. One of ordinary skill in the art would have been motivated to perform such a modification to increase the security of access to the card and to protect against copying the card, as taught by Larsson (col. 4, lines 38-42).

13. Claims 3-4, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Larsson, as applied to claim 2 above, in further view of U.S. Patent 5,241,600 to Hillis. Watanabe discloses a file registry/index area (col. 6, line 56 – col. 7, line 9 & lines 55-64), but lacks transmitting the file registry information that is created in said management sector by encrypting the size of the memory space secured and the file key information with second key information possessed by the management sector. However, Hillis teaches that encrypting data with the private key of an issuer allows only the issuer to change the data, protecting against unauthorized modification (col. 2, lines 8-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include means for transmitting, to said portable electronic device/IC card, file registry information/index area that is created in said management sector by encrypting memory space specifying information for specifying a size of a memory space to be secured in said portable electronic device/IC card and said file key information/code number with second key information/private key possessed by said management sector/issuer. One of ordinary skill in the art would have

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been motivated to perform such a modification to protect the data from unauthorized modification, as taught by Hillis (col. 2, lines 8-21).

14. Claims 5-6, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Larsson & Hillis, as applied to claim 3 above, in further view of "SMuG.0" by Canetti et al. (Canetti).

Regarding claim 5, Watanabe discloses a system, as described above, but lacks replacing/updating the key as described in claim 5. However, Canetti teaches that one known way to distribute an updated key is to encrypt the new key with the old key (page 5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to receive encrypted issuer key change information created by encrypting second issuer key information/new key with said first issuer key information/old key and restoring the second issuer key information/new key by processing the received issuer key change information/encrypted new key with said first issuer key information/old key and update the first issuer key information/old key by said second issuer key information/new key. One of ordinary skill in the art would have been motivated to perform such a modification to distribute an updated key, as taught by Canetti (page 5).

Regarding claim 6, Watanabe, as modified above, lacks specifically the apparatus receiving the issuer key change information/encrypted new key and access key information. However, Watanabe discloses that the IC card interacts with a reader-writer (col. 5, lines 14-35). Therefore, the examiner takes Official Notice that smart card readers-writers receiving update data from a host is old and well established in the art of smart cards/IC cards as a method of

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conveying new information to the cards from a centrally-managed host (otherwise each reader would have to be manually updated). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reader-writer receive the issuer key change information/encrypted new key and access key information. One of ordinary skill in the art would have been motivated to perform such a modification to update data on the card. This advantage is well known to those skilled in the art.

15. Claims 8-9, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, as applied to claim 7 above, in further view of Hillis.

Regarding claim 8, Watanabe discloses file registry information/index area (col. 6, line 56 – col. 7, line 9 & lines 55-64), memory space specifying information/record length (col. 7, lines 55-64) and file key information/code number (col. 5, lines 23-44 & col. 6, lines 27-32), but lacks encrypting the memory space specifying information and file key information and restoring the file key information and allocating space on the device according to the file registry information. However, it is inherent that because Watanabe's IC card stores file key information/code number and memory space specifying information/record length, this information must be communicated to the card and the record length must be allocated in memory (otherwise it would be unusable). Further, Hillis teaches that encrypting data with the private key of an issuer allows only the issuer to change the data, protecting against unauthorized modification (col. 2, lines 8-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include means for transmitting, to said portable electronic device/IC card, file registry information/index area created by encrypting

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memory space specifying information/record length for specifying a size of a memory space to be secured in said portable electronic device/IC card and said file key information/code number with second key information/private key possessed by said management sector/issuer. One of ordinary skill in the art would have been motivated to perform such a modification to protect the data from unauthorized modification, as taught by Hillis (col. 2, lines 8-21).

Regarding claim 9, Watanabe discloses a file registry/index area (col. 6, line 56 – col. 7, line 9 & col. 7, lines 55-64), but lacks the file registry information created by adding said memory space information to encrypted information that is created by encrypting said memory space specifying information and said file key information with said first issuer key information. However, Hillis teaches that encrypting data with the private key of an issuer allows only the issuer to change the data, protecting against unauthorized modification (col. 2, lines 8-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to create the registry information by encrypting the memory space specifying information/size and the file key information/enterprise key with the first issuer key information/issuer key. One of ordinary skill in the art would have been motivated to perform such a modification to protect the data from unauthorized modification, as taught by Hillis (col. 2, lines 8-21).

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, as applied to claim 7 above, in view of Canetti. Regarding claim 10, Watanabe discloses a system, as described above, but lacks replacing/updating the key as described in claim 10. However, Canetti teaches that one known way to distribute an updated key is to encrypt the new key with

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the old key (page 5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to receive encrypted issuer key change information created by encrypting second issuer key information/new key with said first issuer key information/old key and restoring the second issuer key information/new key by processing the received issuer key change information/encrypted new key with said first issuer key information/old key and update the first issuer key information/old key by said second issuer key information/new key. One of ordinary skill in the art would have been motivated to perform such a modification to distribute an updated key, as taught by Canetti (page 5).

17. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, as applied to claim 7 above, in view of U.S. Patent 5,991,749 to Morrill, Jr. (Morrill). Watanabe lacks specifically the portable electronic device being a cellular phone. However, Morrill teaches that cellular phones can be used to perform functions comparable to smart cards to achieve greater security over previous cell phone techniques (col. 1, lines 14-23 & col. 6, lines 16-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to enable a cellular phone with the features of Watanabe. One of ordinary skill in the art would have been motivated to perform such a modification to achieve greater security for transactions than previous cellular phones offer, as taught by Morrill (col. 1, lines 14-23 & col. 6, lines 16-35).

Conclusion

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18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. The '342 reference is cited for teaching a card reader/writer communicating with a host and a smart card.
- b. The '037 reference is cited for teaching encrypting user data with an issuer key for verification.
- c. The '551 reference is cited for teaching updating keys contained on a smart card for use with various applications.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Simitoski whose telephone number is (703)305-8191. The examiner can normally be reached on Monday - Thursday, 6:45 a.m. - 4:15 p.m.. The examiner can also be reached on alternate Fridays from 6:45 a.m. - 3:15 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703)308-4789.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

Or faxed to:

(703)746-7239 (for formal communications intended for entry)

Or:

(703)746-7240 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA 22202, Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MJS
June 7, 2004



NORMAN M. WRIGHT
PRIMARY EXAMINER